TSS-4 Digital SD Recorder

User Manual

Before installing and using, be sure to read this Manual for best performance.

ATTENTION

- This product is to be used within the vehicle interior. In order to prevent short-circuit or the risk of electrical shock, do not use this product within a wet environment.
- In the event of any foreign solid or liquid entering the DVR, please disconnect the power immediately, and have a qualified technician confirm safe operation.
- The product is high-tech equipment, with no user-serviceable parts. Please refer all service to qualified technical personnel.

Installation Environment

- Please ensure that the power supply to the DVR is in the range of 8-48V DC before turning on.
- If you will not be using the DVR for a long period, please disconnect the power.
- Please select an appropriate location for the installation of the DVR, and allow sufficient space for adequate air flow.
- Do not install the DVR in areas of high heat or extreme vibration and mechanical shock.

Packing List

Name	Quantity
TSS4-x Digital Video Recorder	1
User Manual	1
Certificate of Quality	1
Remote Control	1
Connection Port	2
PC View CD	1
Shockproof pad, DVR holder, Screw,etc.	1

Note:
Due to continuing product improvements, specifications and features are subject to change without notice.

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Product Overview

This four-channel embedded digital SD Card video recorder is designed for vehicle safety and surveillance. It uses an embedded processor and embedded operating system, combined with video/audio compression/decompression, GPS, vehicle recorder, and SD card storage technology to ensure high intelligence and high stability. Widely used for buses, ships, trains, and other areas where mobile security is required.

Features

Operating System

- Embedded Linux operating system forstablility.
- Simple Menu User-interface
- Graphical on-screen display.

Video Compression Standard

- H.264 Video format: Excellent images, and the most efficient bit stream.

Surveillance and Video Processing

- Surveillance: 4 channels D1 video (PAL: 720 * 576, NTSC: 720 * 480)
- Recorder: Total resources 100 PAL, 120 NTSC. 4 channels CIF (PAL: 352* 288, NTSC: 352 * 240), HD1 (PAL: 720* 288, NTSC: 720 * 240), D1. (PAL: 720* 576, NTSC: 720 * 480) video storage separately.
- Three record modes: Alarm record, Schecule record and Manual record. Supports 4 channels of video and 4 channels of audio recording simultaneously.
- Video quality: Eight levels, user-selectable.
- Specially designed video file system to prolong the life and improve the security of SD card.
- The video & audio data of SD storage can not be artificially modified, to preserve evidentiary value.

Playback and Search

- Playback is according to date & time.
- Supports 4 channel video and 4 channel audio playback simultaneously, or 1 channel video and audio playback (using our PC viewer software).
- If playback is from the DVR to an LCD monitor, then 1 channel video and 1 channel audio playback is supported .

SD Card and Backup

- Double SD card storage, supports max 64G each.
- Remove the SD card and create backups with special software in your computer, via your card reader.
- Backup can be accomplished by using the USB connection on your computer (the usb port in the main unit is equipped only upon customer’s requirements；USB port backup SD card at this time when 2 is invalid).

Control

- Remote control.
- Dual MCU control, high reliability.

Designed to Prevent Vibration

- The circuit board and all electronic parts & components in the machine are anti-vibration and consolidated for reliability.
- The entire system has anti-vibration construction.

Others

- USB software upgrading，simple maintenance and upgrading.
- Password-protection to prevent data tampering.
- Prevents voltage surges, has low voltage supply protection.
- Time-lapse shut-down function (adjustable--default: 5 seconds).
- Real-time clock.

Technical Parameters

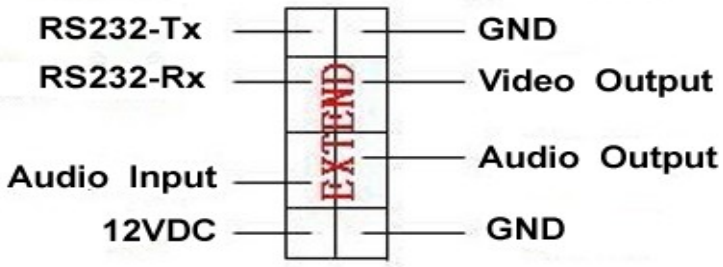
Items	Item Name	4 Channel Mobile DVR(HDD Storage)
	Item Number	TS-810
	Solutions	H.264 Main Profile
System	Operation Interface	Graphical Interfaces
	Password Control	User Password
Video	Video Input	4ch Independent Input: 1.0Vp-p，75Ω.Both B&W and Color Cameras
	Video Output	1 Channel PAL/NTSC Output, 1.0Vp-p，75Ω，Composite Video Signal
	Video Display	1 Or 4 Screen Display
	Video Standard	PAL: 25 frames/Sec NTSC: 30 frames/Sec
	System Resources	PAL:100 Frames; NTSC:120 Frames
Audio	Audio Input	Four Channels Independent Input 600Ω
	Audio Output	1 Channel (Select any of 4 Channels)
	Basic Output Level	1.0—2.2V
	Distortion Plus Noise	≤-30dB
	Recording Mode	Sound And Image Synchronization
	Audio Compression	ADPCM
Digital Processing & Storage	Image Compression	H.264 Fixed Code Stream
	Image Format	4*CIF (352*288), or 4*HD1(720*288), or 4*D1(720*576)
	Video Stream	CIF: 8K-64Kb/s HD1 & D1: 32K-96Kb/s
	Video Usage of SD card	CIF: 28M-230Mb/hr/ch HD1 & D1: 115M-340Mb/hr/ch
	Resolution	Playback 1 Channel
	Video Streaming Standard	H.264 Main Profile
	Audio Bit Rate	4Kb / s /channel
	Audio Usage Of SD card	14Mb / hr /channel
	Internal Storage	Double SD card storage, Max. 64 GB each
	Image Quality	User-selectable, eight Levels
Others	Power	DC8-48v 5%≤12W
	Working Temperature/humidity	-20℃ ~ +60℃/≤80%
	Clock	Built-In Clock, Calendar
Packaging	Product Size	6” (L) x 7.5” (W) x 2.05” (H)（with Bracket）
	Product Weight	1.2 lbs

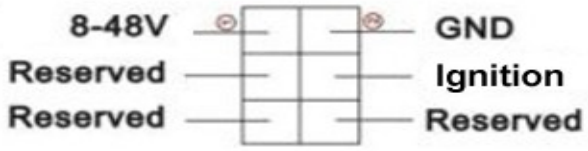
Optional Features

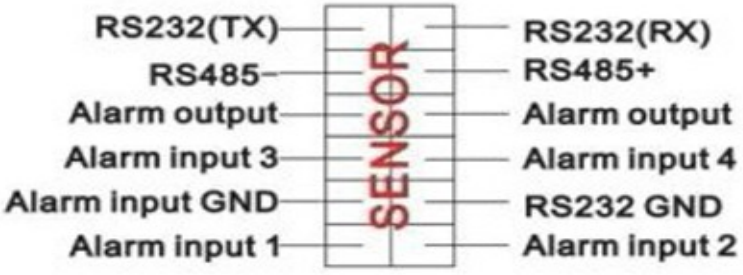
- GPS module
- Ports (one RS-232, one RS-485, cradle head control, PELCO-D, Baud rate 9600, address code 0x01)
- 3G module
- Intercom function

Installation Instructions

External Interface Wiring







4-pin Connector layout

Remarks:

- If the power supply is 12V, then the current of 12V output is limited to 1A. If there are more than 3 cameras, we suggest that customers get power for other cameras from the 12V vehicle power directly.
- RS485 and RS232 interfaces are optional.
- Ports:

DEBUG: testing port
EXTEND: intercom connection port

SD Card Installation

Unlock the unit with the key, making sure that the arrow points to he "**UNLOCK**" position.

Note: The lock also controls the power. When it is placed in the locked position, it also means that the DVR is powered and ready to use. Before turning on, please make sure all the cables in the system are well connected; otherwise, damage could occur.

Using the DVR

Front Panel

LED

- ✓ **PWR LED**: Lit when system is active. Power LED on.
- ✓ **RUN LED**: LED flashes when during normal operation.
- ✓ **SD LED**: Flashes when recording, playing back or backing up.
- ✓ **GPS LED:** GPS activity indicator.
- ✓ **3G LED**: 3G activity indicator.
- ✓ **ACC LED**: Vehicle started indicator
- ✓ **REC LED**: Recording indicator
- ✓

Key and Other Descriptions

- ✓ IR: Infrared receiving window for remote control.
- ✓ LOCK: Secures the SD Card, and controls DVR power.
- ✓ USB: Plays back the video clips of the SD Card via USB.
- ✓ 1: SD card slot
- ✓ 2: SD card slot
- ✓ Video: Video output

Remote Control Operation

Note: The numeric keys may be used when entering passwords.

Menu Setup

In **Live** (non-recording) mode, press **MENU**. If this the first time entering the MENU, the system will display "ENTER THE PASSWORD" (The **default password** is **6666**). When finished, press **OK** to exit the MENU interface. In **Record** mode, please press **STOP** to stop recording, then press **MENU** to enter the MENU interface.

Settings: To set up items as below

- **TIME:** Sets the time.
- **CAR LICENSE**: Sets the vehicle ID number.
- **VIDEO MODE**: Sets the video standard (NTSC or PAL). Takes effect upon restart of the DVR.
- **DELAY TIME**: Sets the timer turn-off function. Default time is 5 seconds. Can be set to 5, 30, 60, 120, 300, 600, 1200, 1800, 3600 or 7200. Takes effect upon restart of the DVR.
- **PASSWORD**: To change the password, you need to enter the original password.
- **NEW PASSWORD**: Set the new password.
-

SD Card: Set up and check the information on the SD Card.

- **SD Card OVERWRITE**: Setup the rewrite function
- **SD Card TOTAL SIZE**: Show the total capacity of the SD Card.
- **SD Card FREE SIZE**: Show the remaining capacity of the SD Card.
- **SD Card FORMAT**: Formats the SD Card. Requests password, if you are using one.

Record: Settings for the video files.

- **REC RESOLUTION**: CIF/HD1/D1
- **RECORD FRAME**: 1~30frames（adjustable）
- **REC QUALITY**: Sets the picture quality (8 levels total，LOWEST—HIGHEST)
- **DISPLAY CH**: Setup the channels-display on the viewing monitor
- **FILE TIME:** Sets record time of image files (300 ~ 3600 seconds)
- **VIDEO RECORD CH**: Sets the recording video channels. **RED** means record.
- **AUDIO RECORD CH**: Setup the recording audio channels. **RED** means record.
- **REC SCHEDULE**: Sets the recording mode for different start/stop times.
  White: No recording **Red**: Recording **S**: Alarm recording

Search: Play back the recorded videos.

- **FILE LIST**: Display the date of the videos and select the date to see the time list of the videos within that day. Select the desired time, and press "PLAY"on the remote control to play back the clip.
- **PLAYBACK CH**: Only 1 channel at a time can be played on your monitor (all can be viewed on the computer application). This selects the channel for playback.

Video download:

- Connect USB Flash Drives or HDD to USB interface in front of the DVR
- Shift to ＂Playback menu＂, select target video for download by Remote control, press ＂OK＂ to start copy.
- Repeat for each section.

Alarm:

- **Alarm record time:** 10-90 seconds since alarm record.
- **GPS Transmission Interval:** GPS signal transmission interval.

Network:

- **DOMAIN NAME:** Used for **3G** real-time viewing--Sets server domain.
- **SERVER PORT:** Used for **3G** real-time viewing--Sets server port.
- **STREAM SIZE:** Available sizes--24kbps, 48kbps, 96kbps, 128kps
- **STREAM FRAME:** Available rates--1~30 fps

Video Data Capacity

Required capacity of video and video-related settings:

VIDEO QUALITY	Total Record Frames	Data Size Per Hour
HIGHEST	120 frames	1120 MB
HIGHER	120 frames	1012MB
HIGH（default）	120 frames	900 MB
BETTER	120 frames	780 MB
NORMAL	120 frames	675 MB
LOW	120 frames	560 MB
LOWER	120 frames	450 MB
LOWEST	120 frames	340 MB
Note: Calculate recording times based upon your settings.		